



Fig. S9 PCA analysis (A) Raster plot of the normalized $\Delta F/F$ calcium activity for all neurons ($n=350$) identified in a time lapse sequence in the PTZ model. The magenta arrow indicates a neuron that increases its activity just before the epileptiform burst and the green arrow indicates a neuron that is active during the burst as represented by the RMS power in the 30-95 Hz band (bottom black trace). (B) Cross-correlogram between the RMS power and the first 10 principal component. The one that present the highest value at lag zero is coloured in green while the one that present a positive peak just before the lag zero is coloured in magenta; the remaining in grey. (C) Percentage of the variance explained by each principal component sorted in a descending order. (D) Coordinated activity of the two selected components (shown in Fig. 6A) in the time period indicated by the yellow line in A. In the x-axis is represented the activity of the pre-Ep component while in the y-axis the Ep. The color-coding indicates the passage of time.